



# KiWi™ Camera-Specific Panoramic Tripod Head Users Guide



***For all models of KiWi Panoramic Tripod Heads  
designed for specific digital cameras***

## Copyright Information

Copyright © 2000 Kaidan, Inc. All Rights Reserved. First Edition, September 2000. KiWi is a trademark of Kaidan, Inc. Other products mentioned herein may be trademarks of their respective companies. Patents Pending.

Information in this manual is subject to change without notice and does not represent a commitment on the part of Kaidan. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or information storage and retrieval systems, or translated to another language, for any purpose other than the licensee's personal use and as specifically allowed in the licensing agreement, without the express written permission of Kaidan.

## Kaidan Warranty and Return Policy

### A • Limited Warranty

In the event of a defect in materials or workmanship, Kaidan will repair the product with new or rebuilt parts for a period of three-hundred and sixty five (365) days from the date of original purchase. Such work will be performed free of charge. Follow the Product Return Procedure (Section D following).

Likewise, any software purchased from Kaidan also comes with a one year warranty if your disc or media is defective or damaged. This warranty is extended only to the original purchaser and is not transferable. A purchase receipt or other proof of original purchase will be required before warranty performance is rendered.

This warranty only covers failures due to defects in materials or workmanship which occur during normal use. It does not cover damages or failures which are caused from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, modification, service by anyone other than an authorized representative of Kaidan, Acts of God, or by products not supplied by Kaidan.

This warranty covers any damage incurred during original shipment of product to customer. Any item resold, or distributed by, and not explicitly manufactured by Kaidan will be covered by their respective company's product warranty.

### B • Warranty Exclusions

There are no express warranties except as listed above.

Kaidan shall not be liable for special, incidental, consequential or punitive damages, including, without limitation, loss of goodwill, profits or revenue, loss of the use of this product or any associated equipment, cost of substitute equipment, downtime costs, or claims of any party dealing with buyer for such damages, resulting from use of this product or arising from breach of warranty or contract, negligence, or any other legal theory.

All express and implied warranties, including the warranties of merchantability and fitness for a particular purpose, are limited to the applicable warranty period set forth above. Some states do not allow the exclusion or limitation of consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

This warranty and any claims which arise with the Kaidan product(s) are governed by the laws of the state of Pennsylvania. By purchasing this product, customer acknowledges and agrees to these Limits and Exclusions. If a problem with your Kaidan product develops during the warranty period, immediately contact Kaidan for assistance.

### C • Product Return Policy

All Kaidan products come with a 30-day return policy (a minimum 10 percent re-stocking fees will apply) from date of purchase, with the exception of software or videotapes.

Both of the aforementioned items are copyrighted and subject to the laws concerning intellectual property. Kaidan will replace defective software/videotapes free of charge upon return receipt of defective item(s). Products returned under this policy, excluding replacement of defective items, must be shipped at purchaser's expense. Purchaser must ship product with an approved traceable service, such as FedEx, and with appropriate levels of shipping insurance for the item being returned. Kaidan will not be held responsible for returned items lost or damaged in transit.

**Kaidan will issue a refund to customer's account if the following conditions are satisfied:**

1) Receipt of item(s) in a restockable condition.

Criteria for Restockable Condition is as follows:

- All parts are included in box; hardware, manuals, discs, nuts/bolts, tools.
- No signs of damage; scratches, bent parts, missing pieces, markings, alterations, or additions to the product.
- All packaging materials are intact; foam, peanuts, cardboard, bubble bags.
- No signs of excess usage or wear to the product.

Items of Non-restockable condition are subject to the following:

- Restocking Fee/s - a minimum of 10 percent and possible additional fees based on the condition of the product (how the product best meets the criteria

above), at Kaidan's discretion.

Non-Restockable Condition - constitutes the following:

- Missing parts; hardware, manuals, discs, nuts/bolts, tools, and packaging materials; foam, peanuts, cardboard, bubble bags.
- Signs of damage; scratches, bent parts, missing pieces, markings, alterations, additions to the product.
- Signs of excess usage or wear to the product.
- Damage or loss incurred during uninsured shipping to Kaidan. In this case, Kaidan cannot issue any type of refund. Customer will be responsible to submit claim with their shipping company.
- If damages occur in shipping, customer must submit claim with shipping company prior to any action by Kaidan.

### Items Part of Special Bundle

If item(s) are part of a special bundle offer, return of part of the bundle will void any special pricing and the item(s) remaining in the possession of the customer will revert to their regular Suggested Retail Price (SRP). The credit, to customer, will reflect the difference of the actual product SRP from the amount of credit due customer.

### Shipping Costs

All shipping costs, VAT, duties and return costs are sole responsibility of customer. If customer purchases thru Kaidan distributor or reseller, customer is responsible for all shipping and VAT costs incurred by that distributor or reseller. These charges are non-refundable.

For instructions on the return of your product, follow the Product Return Procedure below

### D • Product Return Procedure

When returning a product, customer must first contact Kaidan (or the distributor/reseller) and obtain a Return Material Authorization Number (RMA#). After receiving the RMA#, customer will be instructed to return product directly to Kaidan. Returned goods must be shipped with an approved traceable service, such as FedEx, and with appropriate levels of shipping insurance for the item being returned. Kaidan will not be held responsible for returned items lost or damaged in transit. RMA numbers are valid for 15 days, and the product(s) must be received by Kaidan before the RMA expires. We are unable to accept for return any product(s) received after the expiration of the RMA.

### Return Packaging

The product packaging must reflect customer name, address, RMA# as well as Kaidan information:

Kaidan Incorporated  
703 E. Pennsylvania Blvd • Feasterville, PA 19053 • U.S.A.  
**Attention: Return Department per RMA# \_\_\_\_\_**

Contact Information: Voice: 215-364-1778 • Fax: 215-322-4186  
<http://www.kaidan.com> • E-mail: [info@kaidan.com](mailto:info@kaidan.com)

# 1

## Setting Up Your KiWi™ Camera-Specific Panoramic Tripod Head

### Warranty Registration

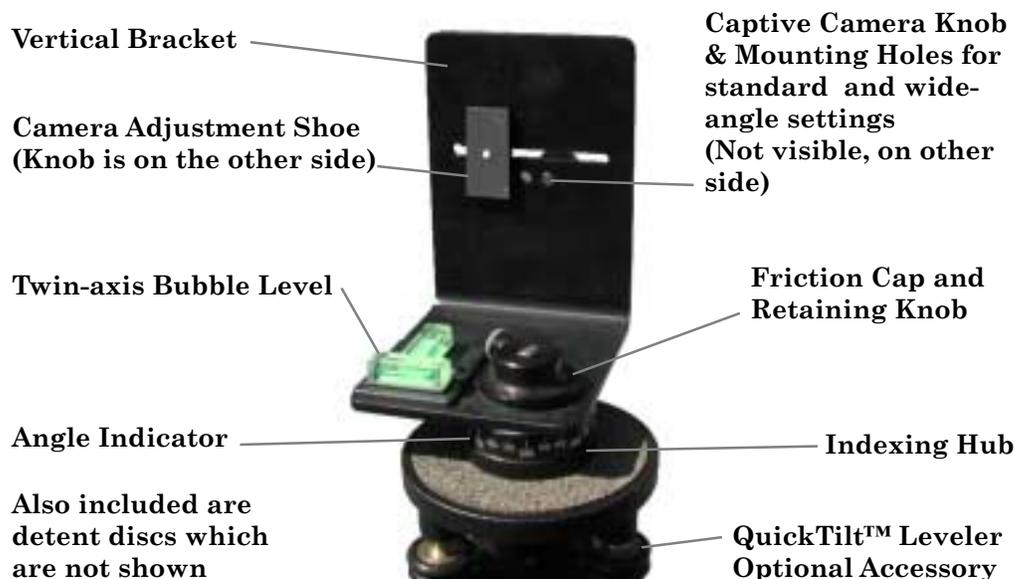
Please take a moment and fill out the warranty registration card included with your package. Please print clearly in capital letters and remember to affix postage. You can also register by faxing the completed card to 215-322-4186 or register on-line at: <http://www.kaidan.com/register.html>

### Unpacking the Box

Your KiWi™ Camera Specific Panoramic Tripod Head (Kiwi™), is shipped in a single box and consists of the components detailed below. Please make sure that all parts are included. Examine the parts for any signs of shipping damage. In the event of shipping damage, immediately contact Kaidan to process claims. If any item is missing or you notice any damage, call Kaidan at 215-364-1778 between the hours of 10AM to 6 PM ET (USA).

### KiWi Components

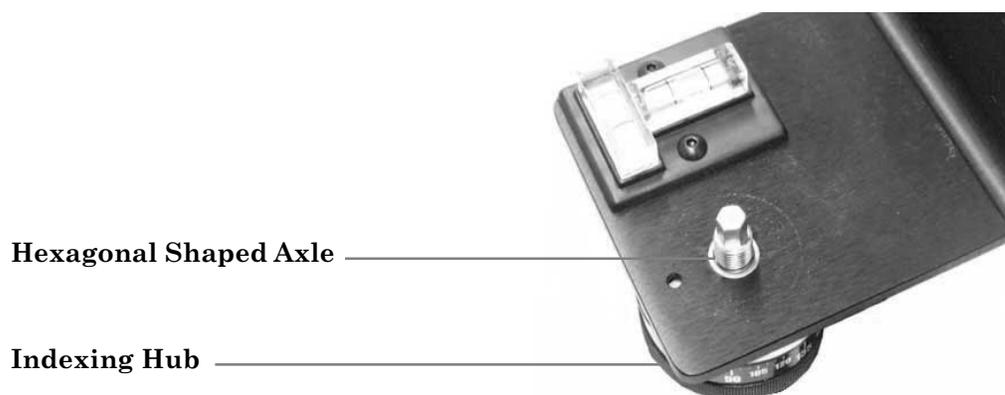
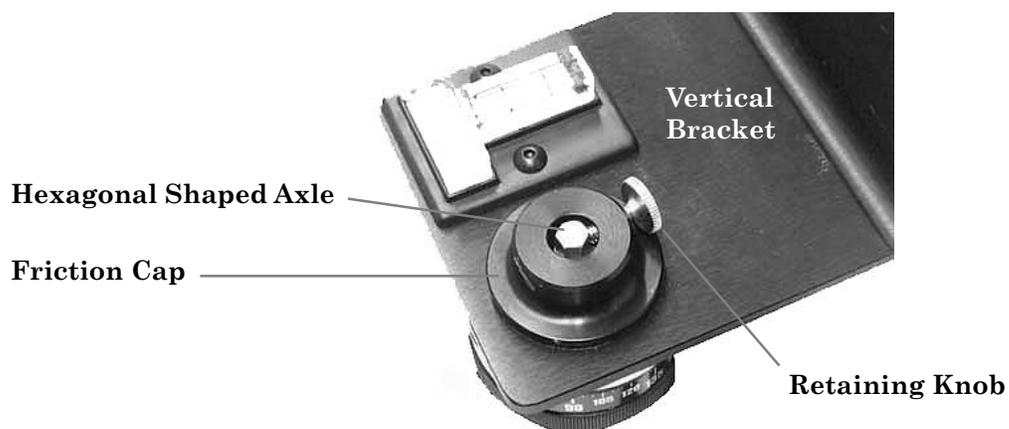
*Note: This panhead is shown for reference purposes only. Other KiWi models may look slightly different.*



## Removing the Friction Cap

The Friction Cap needs to be removed to either install or change the stainless steel detent discs. These discs provide the means for establishing and changing the number and spacing of the angular increments of the tripod head. Most KiWi models come with two discs, one for the standard lens and one for a wide-angle lens. Some KiWi models, such as the KiWi 990, come with additional discs for other lenses such as the Nikkor fisheye lens. **(See List of Specified Wide Angle Lenses in Appendix A and List of Detent Discs in Appendix C).**

To remove the Friction Cap, loosen the stainless steel Retaining Knob which is located on the side of the Friction Cap. It does not have to be removed from the Cap, but only backed out far enough to allow the cap to be unscrewed from the axle. You can look into the opening in the center of the cap to see when the Retaining Knob is clear of the hexagonal-shaped axle. Rotate and unthread the Cap counterclockwise and remove it from the unit. Once the Friction Cap has been removed, separate the Vertical Bracket from the Indexing Hub. You might need to wiggle the pieces as you pull them apart.



## Removing & Replacing the Detent Disc

Once the Indexing Hub is removed, the detent disc can be removed from its recess in the bottom of the Vertical Bracket. The disc may slip out once the Indexing Hub is removed. If it sticks inside the recess, simply insert the tip of a ballpoint pen or the end of paper clip into the detent disc ejection hole on the top of the bracket and push the detent disc out of the disc recess.



With the disc removed, a different disc can be inserted to change the angular spacing. **(See List of Specified Wide Angle Lenses in Appendix A).**

To install a different size disc, simply align the keyed slot and push the disc into the recess. Make sure the disc is properly seated and flush to the bottom surface of the Vertical Bracket. With the new disc inserted, reassemble by inserting the Indexing Hub back through the bearing in the Vertical Bracket.

## Replacing the Friction Cap

Replace the Friction Cap by threading the Cap back onto the axle. Continue to thread the Cap so that there is no free play between the Vertical Bracket and the Indexing Hub. The rubber washer on the bottom of the Friction Cap should be slightly compressed. When the drag feels adequate, turn the Friction Cap so that the threaded shaft of the Retaining Knob is aligned with the closest flat on the axle. Tighten the Retaining Knob to lock the Cap in place.



Rubber Washer

## Adjusting the Detent Force

If adjusting the Friction Cap does not provide enough tension, there is a spring plunger in the indexing hub that can also be adjusted to vary the force. Use a flat blade screw driver to move the plunger in and out as desired. A convenient way to adjust the plunger is to screw the plunger all the way in until it gently bottoms out. Then unscrew the plunger about one complete turn.



# 2

## Shooting Panoramas

### Mounting the Camera?

Mounting your camera to your KiWi is easy. Kaidan has provided mounting holes to make it simple. Just choose the appropriate mounting hole for the lens you wish to use. Most KiWi heads have two mounting locations for the standard and wide-angle lenses. Some KiWi heads, such as the KiWi 990, have three holes for additional lenses.(NOTE:See the Appendix D for the lens mounting location for your particular camera).

If you are using a lens that is different from the standard or wide-angle lenses that are supported with mounting holes there is a slot that can be used to mount and adjust your camera. This slot lets you choose any position along the bracket. There is a calibration procedure that is explained later on in this manual that will show you how to position your camera and lens correctly.

Your KiWi also comes with a Camera Adjustment Shoe to help keep your camera mounted vertically. It also makes it easy to remove and replace your camera in the same position.

Before you attach the camera, loosen the knob on the shoe. Once the knob is loose, the shoe is free to slide forward or backward to help position the camera. Push the shoe up against the camera in order to align it securely. You may need to remove the shoe and reposition it against either the front or the back of the camera, depending which configuration is selected.

**Camera Adjustment Shoe**  
**(Knob is on the other side)**



## Mounting the Camera? (continued)

The KiWi™ is designed to be used with either the standard wide-angle camera setting or with a specific wide-angle or fisheye lens. **(See List of Specified Wide Angle Lenses in Appendix A)**. The threaded mounting holes below the slot on the Camera Bracket will position the camera at its proper nodal point setting for either configuration. The diagram below shows the proper mounting holes for the camera.

*Note: The mounting hole for the standard lens on all KiWi™ Camera-Specific Brackets is the one that is closest to the rotating pivot point.*

The slot above the camera mounting holes will accept the Camera Knob and can be used to locate the camera in accordance with the nodal points of other 3rd party lenses **(See Chapter 3 for instructions)**.

**This panhead is shown for reference purchases only. Your model might look slightly different.**



## How Many Shots?

Determining the number of shots you'll need to take is a function of the lens you're using. In general, you'll want to have 1/4 to 1/2 overlap between adjacent images. Kaidan has included detent discs without your KiWi in order to cover the standard and wide-angle lenses for your particular camera. If you're using a different lens, or want more or less overlap, you can purchase additional detent discs from Kaidan. They are sold singly or in packs of four. Most of our KiWi heads use 14 shots for the wide-angle lens and 18 shots for the standard lens. **(See List of Specific Wide-Angle Lenses in Appendix A)**

## Shooting the Panorama

The KiWi™ has a female 1/4-20 thread on the bottom of the Indexing Hub for mounting to most standard tripods. Be sure that the KiWi is securely attached to the tripod. Use a tripod that is sturdy, ideally one that has a center support system of braces to help keep the camera and KiWi from excessive flexing. It may be possible that your tripod uses a larger 3/8 inch thread. If this is the case, you can purchase a 3/8 to 1/4 adapter at a camera store or photographic equipment supplier.

When ready to shoot, it is important that the KiWi is level. Observe the twin-axis bubble level on the KiWi while leveling the tripod. Of course, this task is much easier if the tripod is equipped with a tilt head. If the tripod does not have a tilt head, a QuickTilt™ leveler can be purchased from Kaidan for use with the KiWi. The QuickTilt is a convenient aid for making the small leveling adjustments you'll need to make as you move from spot to spot.

Once the KiWi is level, double check to see if the camera is mounted level in elevation (up and down). This is even more important than the leveling of the unit done previously. Use the Camera Adjustment Shoe and place it against the camera. By placing the shoe squarely and snugly against the camera, it will help to vertically align and position the camera so that the camera's optical axis is parallel to the plane of rotation.



You are now ready to begin capturing your first panorama. You should also, at this time, review the documentation of the panoramic stitching software that is being used in order to get recommendations for exposure settings and other camera settings. You'll want to try and position the camera and tripod so as to avoid direct sunlight. Try and locate the unit so that the sun (or other bright lights) is behind a tree or a building. Cloudy days are also helpful in this regard.

## **Shooting the Panorama (continued)**

Once the tripod is positioned and the KiWi is leveled, index the KiWi so as to point it at some identifiable feature. Instead of counting shots, it's much easier to stop shooting when you notice that particular feature reappearing.

If your camera has an exposure lock feature, you might want to experiment with it. Try to lock the exposure on a scene that is average in brightness.

Once you're set up, simply shoot, index and repeat as quickly as possible. Be careful not to bump the camera as you proceed around the sequence.

# 3

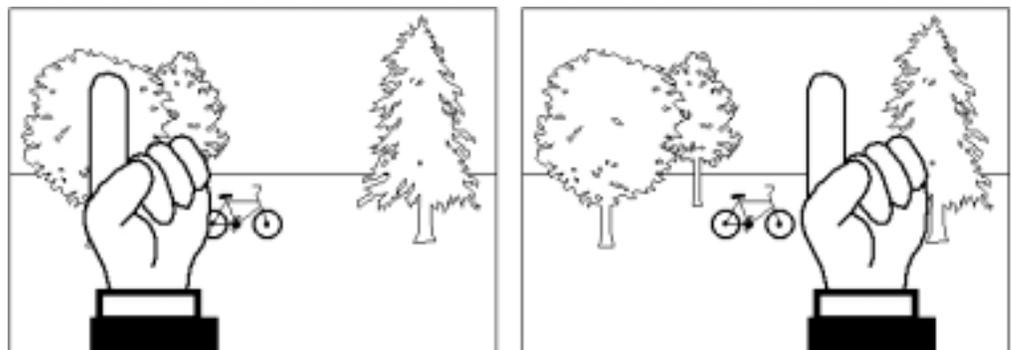
## Finding the Nodal Point with 3rd Party Lenses

### How do I Locate my Camera's Nodal Point?

Follow these steps and you will be able to easily locate the nodal point for any camera and lens combination.

Simply put, the nodal point is the point inside your camera where the light rays converge and flip over. When shooting an immersive panorama, it is necessary to rotate about this point to eliminate the image mismatch caused by parallax error.

Parallax error can be easily demonstrated by this simple experiment. Close one eye and hold your index finger upright about six inches away from your open eye. Rock your head from side to side. Notice how your finger moves with respect to the background. This relative movement is due to the fact that you are not rotating your head around your eye's nodal point, which is somewhere in the center of your eyeball. Instead, you're rotating about your spine which is several inches to the rear and off to one side. It is this relative side-to-side motion that we will strive to eliminate when setting up a camera for VR panoramas.



### The Side-to-Side Adjustment

Your KiWi head is designed for a specific camera. The side-to-side adjustment that is normally required for universal models, such as our KiWi+ is not needed.

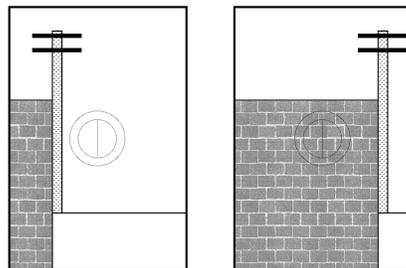
## The Fore-Aft Adjustment

Put the Captive Camera Knob in the long slot of the Vertical Bracket. This will allow you to slide the camera (along with the Camera Adjustment Shoe) as required.

**Note:** This step is most easily accomplished outside. Find a vertical edge or line, such as a doorway or edge of a building. Position the unit and tripod about four feet away, or as close as possible with the edge still in focus when looking through the view displayed on the LCD screen of the camera.

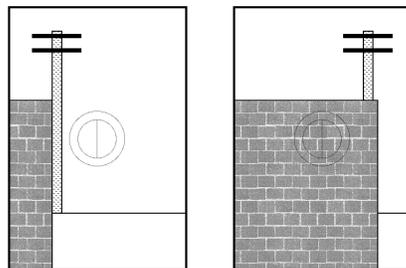
Looking at the camera's LCD, find another vertical edge or object that is far away, such as another building or telephone pole. Align the two objects and rotate the Vertical Bracket so that they are in the left hand side of the viewfinder.

Rotate the pan head so the two objects move over to the right hand side of the viewfinder. Unless you have managed to unwittingly locate the right nodal point position, you should notice the two objects will move with respect to each other as the Vertical Bracket is rotated from left to right. Slide the camera to the front or rear as required to eliminate this relative movement.



**Good.**  
No relative movement between objects  
when rotating camera from side to side.

Looking through the viewfinder, align a close object (brick wall) with a faraway object (telephone pole). As the camera is rotated from side-to-side, there should be no relative movement between the two objects.



**Bad.**  
Relative movement between objects  
when rotating camera from side to side.

If, as shown to the right, the two objects move with respect to one another in the viewfinder, slide the camera fore or aft in order to eliminate this movement. Here, the telephone pole has moved behind the brick wall.

## Appendix A

### List of Specified Wide Angle Lenses for Kiwi Camera Specific Panheads

Panhead	Wide Angle Lens
KW-2000	Olympus Wide Conversion Lens WCON-08 (screw-on)
KW-2700	Raynox 0.65x Wide Angle Lens (Model# Pix-2200 Telephoto & Wide Angle 2-Lens kit)
KW-2900	Fujifilm 0.8x Wide Angle Lens (screw-on)
KW-600/620	Olympus Wide Conversion Lens WCON-08 (screw-on)
KW-700	Nikon 24mm Wide Angle Lens WC- E63 (screw-on) NOTE:Nikon UR-E1 step-up ring required on CoolPix 700
KW-800	Nikon 24mm Wide Angle Lens WC- E63 (screw-on)
KW-900/950	Nikon 24mm Wide Angle Lens WC- E63 (screw-on)
KW-990	Nikon 24mm Wide Angle Lens WC- E63 (screw-on)
KW-290	Tiffen Super-Wide Angle Converter 0.5X (Kodak Item# 1142413, adapter-Kodak # 8675021)
KW-VL	Voigtlander Ultrawide-Heliar 12mm F5.6 Aspherical

## Appendix B

### Detent Disc Selection Chart

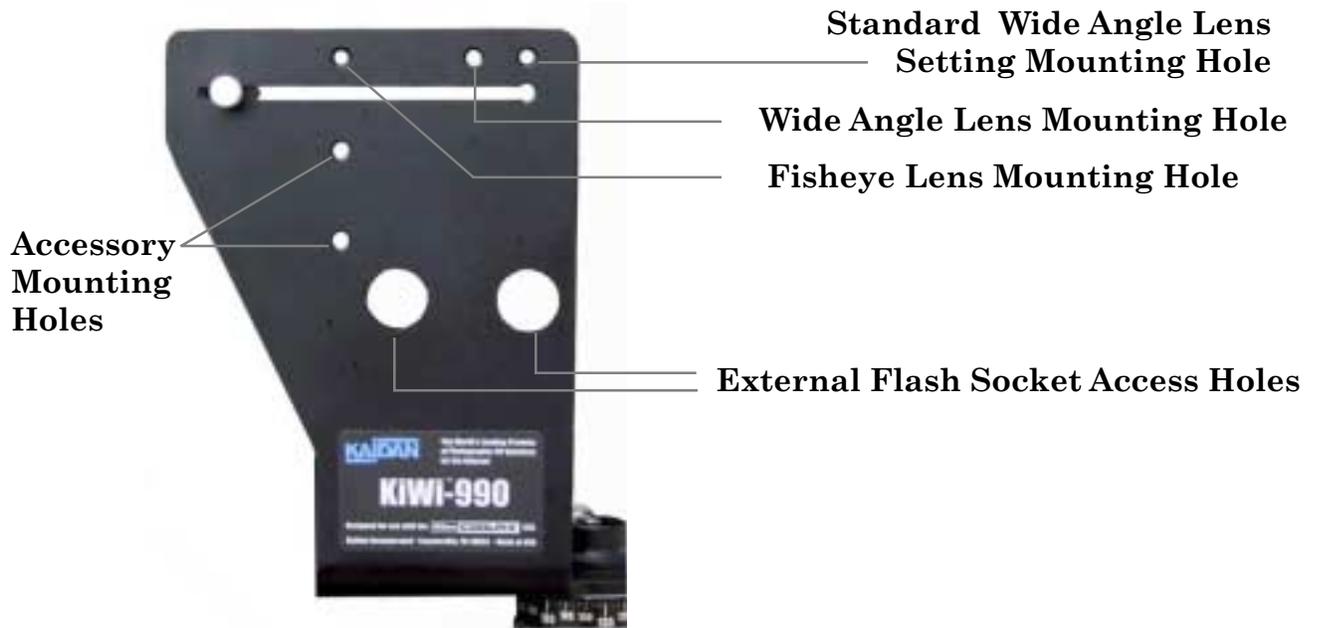
Lens (mm)	50% Overlap	25%-33% Overlap
12	8	6
14-15	12	10
18-20	16	12
22-24	18	14
26-28	18	16
30-35	20	18

## Appendix C

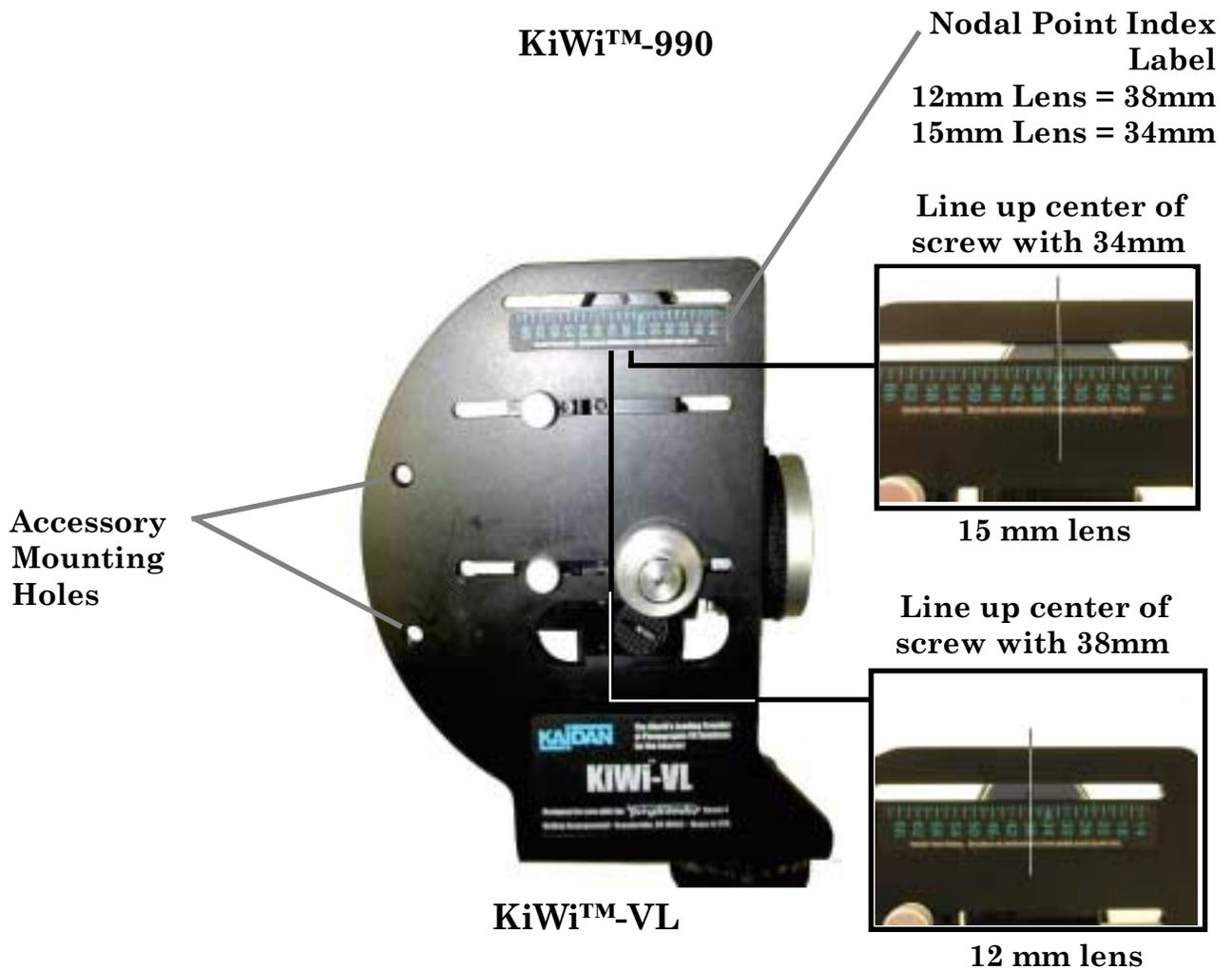
### Detent Discs included with each KiWi Camera Specific Bracket

<b>Model#</b>	<b>Detent position(s), (lens)</b>
KW-A50	16 (std.)
KW-290	9 (wide), 18 (std.)
KW-2000/2020	14 (wide), 18 (std.)
KW-2700	14 (wide), 18 (std.)
KW-2900	14 (wide), 18 (std.)
KW-600/620	14 (wide), 18 (std.)
KW-700/800	14 (wide), 18 (std.)
KW-900/950	14 (wide), 18 (std.)
KW-990	2 (fisheye-mode#1), 5 (fisheye-mode#2), 14 (wide), 18 (std.)
KW-VL	5 (12mm), 6 (12mm), 7 (15mm), 8 (15mm)

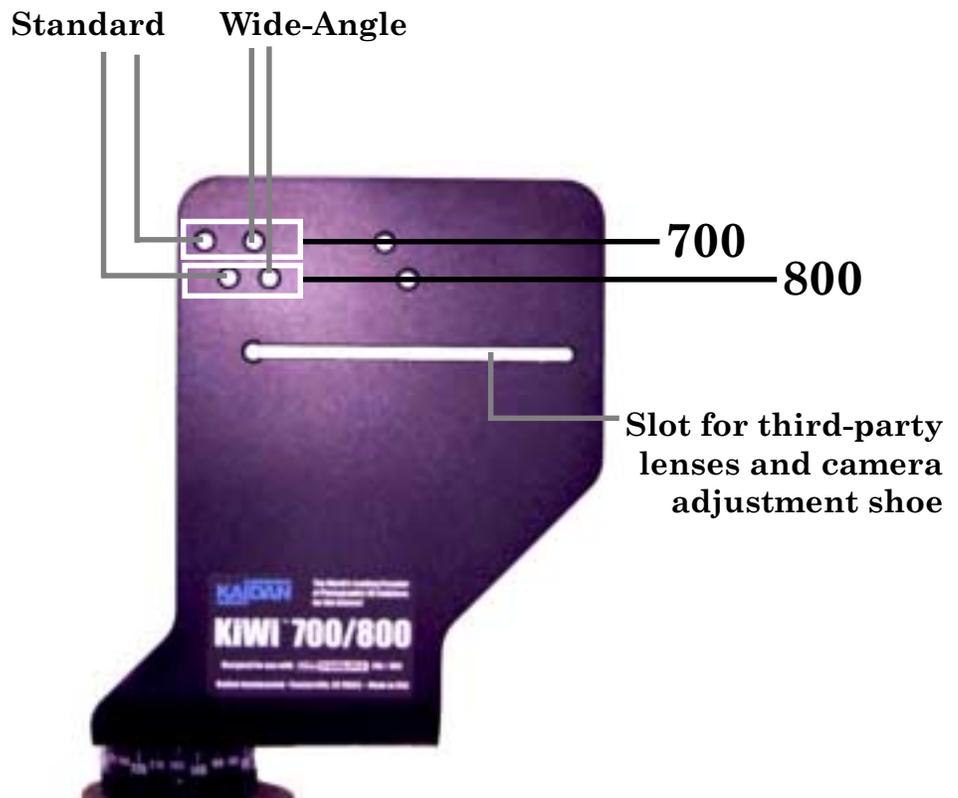
# Appendix D: KiWi Model Specifics



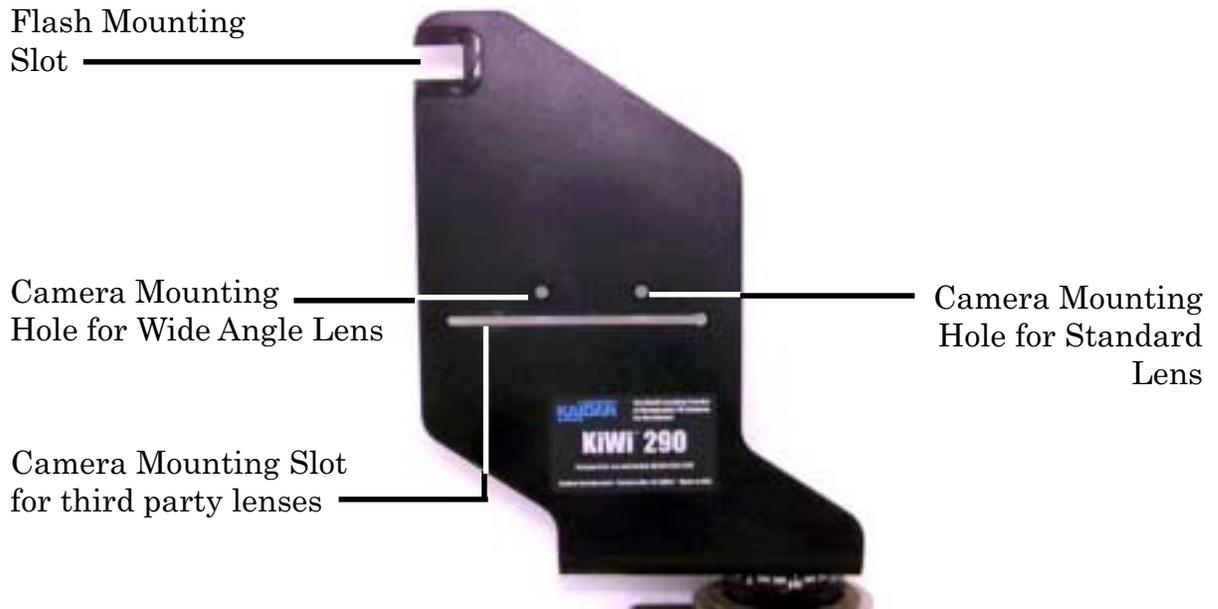
KiWi™-990



KiWi™-VL



**KiWi™ 700/800**



**KiWi™-290**



**Mounting configuration for the KW-290 with the standard lens and flash mounted.**



**Mounting configuration of the Cannon A50 on the KW-A50**

**KAI DAN**

**Kaidan Incorporated • 703 E. Pennsylvania Blvd • Feasterville, PA 19053 • U.S.A.**

# KiWi 280



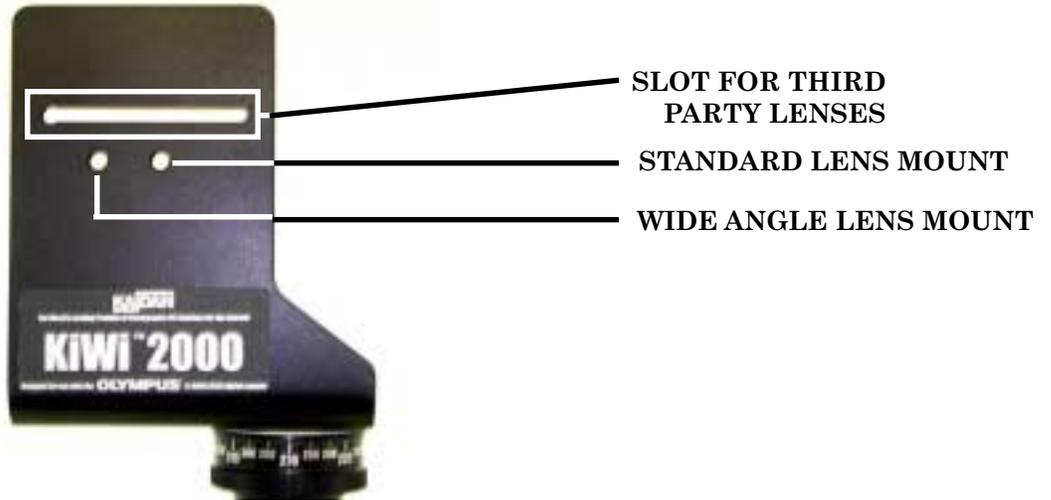
Mounting Hole for  
standard lens setting

Slot for third party lenses



**KiWi 280 mounting configuration  
(leveler not included)**





**KW-2000/2020**



**KW-600/620**

## Camera Adjustment Lug Addendum

Because of the various sizes and camera body profiles, we have included a camera adjustment lug as an additional means of keeping your camera mounted in an vertical position. Shown below are examples of various ways to use the Camera Adjustment Lug to mount your camera.



# Frequently Asked Questions

## What do digital camera manufacturers mean by 35mm format equivalent lens?

The CCD arrays in a digital camera are much smaller than the imaging area on 35mm film. The CCD size differs from camera to camera. So in order to eliminate any confusion, the focal length is often stated by the camera manufacturer as a 35mm format equivalent, because people are more familiar with the 35mm lenses and what kind of image a certain lens will often produce. In order to arrive at the 35mm format equivalent they need to multiply the size of the sensor by a value called the “focal length multiplier”. The focal length multiplier is expressed as a scale factor such as 1.5 or 1.6, thus on a digital SLR with a focal length multiplier of 1.5x, a 28mm lens would produce the equivalent picture angle, (strictly “field of view”), of a 42mm lens. The 35mm format equivalent of the lens on your camera is usually included in the specification section of your camera users guide or manual.

